Updates on SnowEx'17 Data



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NASA Workshop on SnowEx Results & Campaign Planning Baltimore, MD, September 17, 2019

SnowEx'17 Data Highlights:

- SnowEx official data archive is National Snow and Ice Data Center (NSIDC) DAAC.
- Official data includes
 - rigorous quality control/user support
 - extensive metadata (machine-searchable)
 - consistent format w/other campaigns
 - documentation
- snow.nasa.gov -> Campaigns-> SnowEx -> Campaign data.
- Products released (17/46):
 - Airborne, 6/13
 - GBRS, 6/21
 - Field, 5/12

SnowEx'17 Data at NSIDC (46 data products)

Instrument ammer (Airborne) Primary data greedment (3) Bill Book	SnowEx Data Inventory Process Tracking	2/22/2018 EK						
Cloud Absorption Redienter (CAB) Cloud	Instrument name (Airborne)	Primary data product(s)	in digital	pre/sub	Data QA	metadata	final	Product Name at NSIDC
Regul LMS-Q1500 surface elevation, stow depth, change in which imagery Description		BRDF, albedo						Cloud Absorption Radiometer BRDF (SNEX17 CAR)
Place Comment State Stat	2 CASI-1500 Hyperspectral VNIR Imager	irradiance, radiative forcing, snow albedo,						
Source temperature maps Indexnown artifact emperature brightness Visibe Insacry V	3 Riegl LMS-Q1560	surface elevation, snow depth, change in						
6 IR redometer Indisons warface temperature brightness 1 PA 3 video canera 2 viable imagery Onat Ph Backestner and State Lock Onat Ph Backestner and St	4 PhaseOne iXU 180-R50	visible imagery						
J. WASM AND COLORS AND	5 QWIP camera	Surface temperature maps						QWIP Data (SNEX17_QWIP_ST)
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Wish And oneter (nasive microwave) brightness temperature	9 GLISTIN-A							GLSITIN-A (Brokered from JPL)
12 WISM SAR (either microwave) backscatter surface temperature wife temperature	10 SnowSAR	backscatter						SnowEx17 SnowSAR FMCW Waveforms
Instrument name (GRSS) Parsivel Dischtometer and Plavio 400 Weighing Precipitation Precipitation Dress Size Distribution	11 WISM radiometer (passive microwave)	brightness temperature						Wideband Instrument for Snow Measurements (WISM) Radiometer Passive
Instrument name (GBRS) Variables observed and/or derived Praise/Bub Disdrometer and Plavio 400 Weighing Precipitation Drop Size Distribution Secretal aerosi contical depth Frequency Modulated Continuous Wave Malia Prequency Modulated Continuous Wave Frequency Modulated Continuous Wave Secretal aerosi contical depth dep	12 WISM SAR (active microwave)	backscatter						
Partive Distrometer and Plavio 400 Weighing Precipitation Percipitation Drop Size Distribution	13 KT-15	surface temperature						KT-15 Data (SNEX17_KT15_ST)
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4 UN-Seat Normalised Radiometer System-3 V and all pol brighness temperature at 1.4, 1 5 Truck Mounted Radiometer System-3 V and all pol brighness temperature at 1.4, 1 7 Mala Pol-18 Cape Frequency Modulated Continuous Wave Pol-18 Prequency Wave Pol-18 Preparation Fore Pol-18 Republication Pol-18 Preparation Fore Pol-18 Republication Pol-18 Preparation Pol-18 Prepara	2 Cimel sunphotometer #599	spectral aerosol optical depth						
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10 250k; FMCW	8 PulseEkko							
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2 Snow Sensor	10 25Ghz FMCW							Ground-Based Broadband Frequency Modulated Continuous Wave Radar (SNEX17_GBB_FMCW)
13 ASD FieldSpec	11 FlatEarth							
14 Ground Penetrating Radar Ground Penetration Galling Penetration Gal	12 Snow Sensor	snow pack temperature, density, wet or dry,						
Brightness temperatures Brightness temperatures Brightness temperatures Brightness temperatures (SNEXI7 SBR)	13 ASD FieldSpec	irradiance, radiance, spectral reflectance,						
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17 Wingscapes TimelapseCam RGB image Single VZ-4000; Riegl V	16 Precipitation Imaging Package (PIP)	falling precipitation size distributions and fall-						• • • • • • • • • • • • • • • • • • • •
19 Riegl VZ-1000 surface elevation, vegetation elevation, surface		RGB image						
19 Riegl VZ-1000 surface elevation, vegetation elevation, surface	18 Riegl VZ-4000; Riegl VZ-6000; Riegl VZ-400	surface elevation, vegetation elevation,						
21 Gulf Coast Data Concepts X16-1D Two-axis tree acceleration at 12 Hz	19 Riegl VZ-1000	surface elevation, vegetation elevation,						Boise State TLS (Terrestrial Laser Scanning) Data (SNEX17_TLS_PC_BSU)
22 OTT Hydromet Pluvio-2 Snow Depth Snow MicroStructure Specific Surface Area Laser Snow MicroStructure Specific Surface Area Data (SNEX17_SSA) Differential GNSS Survey Snow Depth, Latitude, Longitude, time, Snow MicroStructure Snow Depth, Probe Measurements (SNEX17_SNP) Snow Pit Measurements Snow Pit Measurements (SNEX17_SnowPits) Snow Pit Measureme	20 Leica ScanStation C10	surface elevation, vegetation elevation,						CRREL TLS (SNEX TLS PC CRREL)
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NSIDC DAAC Metrics for ASO and SnowEx through August 2019

ASO

- 98 unique users
 - 3M_SD 44
 - 50M_SD 42
 - 50M_SWE 30
- 963 science files downloaded
- Users from 15 countries
 - USA 67 (68%)
 - China 9 (9%)
 - Norway 5 (5%)
 - Iran 3 (3%)
 - Others 14 (14%)

SnowEx'17

- 151 unique users
- 140,875 science files downloaded
- Users from 17 countries
 - USA 102 (65%)
 - China 13 (8%)
 - Canada 12 (8%)
 - India 9 (6%)
 - Others 20 (13%)

Airborne Data (6)

Product Name	Primary data products	users
Cloud Absorption Radiometer BRDF (SNEX17_CAR)	Surface reflectance maps, Snow spectral BRDF, snow spectral albedo	11
QWIP Data (SNEX17_QWIP_ST)	Surface temperature maps	4
P-3 Video Data (SNEX17_P3V)	video	8
UAVSAR (from JPL)	Quad Pol Backscatter and Single Look Complex Stacks	?
GLSITIN-A (from JPL)	Backscatter and Topographic Height	?
KT-15 Data (SNEX17_KT15_ST)	surface temperature	9

GBRS (6)

Primary data products	users
Normalised Radar Cross Section (backscatter) at Ku and X-band (VV, HH, VH, HV), Mueller Matrices.	18
Surface temperature maps	21
Brightness temperatures	2
surface elevation, vegetation elevation, vegetation structure, snow depth (Riegl VZ-1000)	10
surface elevation, vegetation elevation, vegetation structure, snow depth (Leica ScanStation C10)	6
15 min snow depth	22
	Normalised Radar Cross Section (backscatter) at Ku and X-band (VV, HH, VH, HV), Mueller Matrices. Surface temperature maps Brightness temperatures surface elevation, vegetation elevation, vegetation structure, snow depth (Riegl VZ-1000) surface elevation, vegetation elevation, vegetation structure, snow depth (Leica ScanStation C10)

Field Measurements (5)

Product Name	Primary data products	users
Laser Snow Microstructure Specific Surface Area Data (SNEX17_SSA)	Specific Surface Area (IceCube, IRIS)	18
CRREL Differential GNSS Survey (SNEX17_DGNSS1)	Differential GNSS Survey	6
SnowMicroPen (SMP) Raw Penetration Force Profiles (SNEX17_SMP)	The SMP acquires very high vertical resolution measurements of force (units=Newtons). From these force measurements, algorithms are applied to estimate snow microstructure parameters such as density, specific surface area, snow grain type, etc.	31
Community Snow Depth Probe Measurements (SNEX17_SD)	Snow depth	28
Community Snow Pit Measurements (SNEX17_SnowPits)	Snow density, Snow temperature, grain size, Snow grains (study site, local landscape, data collection), Snow pit stratigraphy	47

THANKS:

- Data providers
- NSIDC/Tanner, Heightley, et al,
- NASA/HQ/J. Entin